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Office of the Legislative Auditor

State of Montana

Report to the Legislature

December 1992

Performance Audit Report

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Forestry Equipment Program

Department of State Lands

This report contains recommendations for improvement to program operations. The recommendations address:

- **Analyzing fleet size, use, and replacement.**
- **Monitoring fleet repair and maintenance costs.**
- **Establishing a fleet management system.**

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December 1992

The Legislative Audit Committee
of the Montana State Legislature:

This is our performance audit of the Forestry Equipment Program, administered by the Department of State Lands. This report contains information for the legislature concerning Forestry equipment accountability, and fleet size, use, and replacement. Department responses are contained at the end of the report.

We wish to express our appreciation to the staff of the department for their cooperation and assistance.

Respectfully submitted,

Scott A. Seacat
Legislative Auditor

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Office of the Legislative Auditor

Performance Audit

Forestry Equipment Program

Department of State Lands

Members of the audit staff involved in this audit were: Susan Jensen, Mary Reynolds-Zednick, and Jim Nelson.

Table of Contents

List of Tables and Figures iii

Elected and Administrative Officials iv

Report Summary S-1

Chapter I
Introduction

Introduction 1

Audit Objectives 1

Audit Scope 1

Data Limitations 3

Compliance 3

Management Memorandums 3

Chapter II
Background

Introduction 5

History 5

Organizational Structure 5

Forestry Program Funding and Staffing 8

Forestry Equipment Program 9
  Forestry Equipment Funding 10

Chapter III
Equipment
Accountability and Use

Introduction 13
  State Equipment 13
  Federal Excess Personal Property 14

Equipment Accountability System Operating as Intended 14

Equipment is in Useable Condition and Used 15

Chapter IV
Forestry Program Fleet

Introduction 17

Fleet Odometer Records are Accurate 17

Fleet Replacement Schedule is Reasonable 17

Fleet Age and Mileage 18
  Fleet Age Distribution by Class 19
  Thirty-One Percent of Fleet Exceeds Mileage Requirement 19
  Fleet Analysis Summary 20

Table of Contents

Fleet Use 22

Division Should Analyze Fleet Needs 24

Repair and Maintenance of Forestry Program Fleet 26

Responsibility for Forestry Program Fleet 29
    Need for Fleet Management System 30

Agency Response

Department of State Lands 35

List of Tables and Figures

Table 1 Forestry Program Expenditures (Fiscal Years 1990-91 and 1991-92) 8

Table 2 Acres Assumed by DSL 11

Table 3 Forestry Program Fleet Comparison of Other State's Replacement Schedules (By Vehicle Class) 18

Table 4 Forestry Program Fleet Analysis By Age (Autumn 1991) 19

Table 5 Forestry Program Fleet Analysis By Mileage (Autumn 1991) 20

Table 6 Forestry Program Fleet Summary (Autumn 1991) 21

Table 7 Expected Annual Mileage Based on Replacement Schedule . . 22

Table 8 Number of Vehicles by Mileage Ranges 23

Figure 1 Organization Chart of the Department of State Lands 6

Figure 2 Geographic Distribution of Land and Unit Offices 7

Figure 3 Forestry Program Equipment Budget Requests and Appropriations 10

Figure 4 Forestry Program Vehicle Repair and Maintenance Costs 27

Elected and Administrative Officials

State Board of Land Commissioners	Stan Stephens	Governor
	Marc Racicot	Attorney General
	Mike Cooney	Secretary of State
	Nancy Keenan	Superintendent of Public Instruction
	Andrea "Andy" Bennett	State Auditor
Department of State Lands	Dennis Casey	Commissioner
Forestry Division	Don Artley	State Forester
	Jeff Jahnke	Assistant Administrator
Centralized Services Division	Bob Kuchenbrod	Administrator
Field Operations Division	Randy Mosley	Administrator

Report Summary

Introduction

Our performance audit concentrated on the Forestry Equipment Program of Department of State Lands (DSL). The Forestry Equipment Program includes equipment used primarily by the Forestry and Field Operations Divisions within DSL. The objectives of the audit included evaluating management controls over equipment accountability, and determining if Forestry equipment is used, maintained, and replaced in an efficient manner. To gather information concerning these issues we visited land and unit offices, and the division office in Missoula.

Different Users of Forestry Equipment

Forestry and Field Operations Divisions are the primary users of forestry equipment. These divisions are responsible for providing surface management on all school trust land and providing fire protection on all private and state land within forest fire districts and counties as requested.

Centralized Services Division is responsible for providing support to the Forestry and Field Operations Division by administering purchasing, equipment accountability, and equipment distribution.

Forestry Equipment Program

The Forestry Equipment Program has approximately 5,200 items of state and federal equipment with an acquisition cost of almost $14.2 million. State and federal equipment used in the Forestry Equipment Program consists of on and off-road vehicles and other equipment including radios, computers, chainsaws, and various items ranging from helicopters to water tanks.

Equipment Accountability System is Operating as Intended

Forestry equipment is located at six land offices, 14 unit offices, and in 52 counties participating in the State-County Cooperative Fire Protection Program. We sampled 436 pieces of forestry equipment. We were able to trace 434 pieces of the equipment through the department's inventory records and verified existence and location. During our field visits, we generally found Forestry equipment to be in useable condition and being used by staff.

Fleet Age and Mileage

As of Autumn 1991, Forestry Equipment Program had an inventory of 265 vehicles, with a replacement value of approximately $5.4 million at current replacement rates. We evaluated the age and accumulated mileage to determine the current status of the Forestry Program's fleet of vehicles. The data was compared to vehicle replacement criteria established by the Forestry Division. We found 124 of 265 state-owned vehicles (46.8 percent) meet or exceed the established replacement age.

In addition to vehicle age, Forestry Division uses mileage as criteria for replacement. We found 82 of 265 (30.9 percent) of forestry vehicles meet or exceed mileage established for replacement.

Fleet Use

To examine the actual use of Forestry's fleet, we calculated the number of miles vehicles were driven from Autumn 1989 to Autumn 1991. We used established replacement criteria to calculate the expected annual miles each class of vehicle should be accumulating. We found the Forestry fleet of vehicles is generally accumulating mileage at a slower rate than would be expected based on established replacement criteria.

Analysis by individual vehicle found 12 highway vehicles accumulated less than 1,000 miles per year. Another 11 highway vehicles accumulated between 1,001 and 2,000 annual miles. We found these low use vehicles were generally older vehicles ranging in age from 10 to 24 years. There were also a few newer vehicles with limited use. Excluding medium and heavy engines, 47 of 253 vehicles (19 percent) accumulated 3,000 miles or less per year.

Division Should Analyze Fleet Needs

The division began planning its replacement schedule and collecting mileage data in 1989. The schedule was first used during the budget process for the 1991 Legislature. Mileage data is not used to analyze actual use of the fleet. We could find limited documentation showing how the division's fleet was established. It appears the size of the fleet has been controlled mostly by available appropriations. We believe Forestry Division should establish and use a documented methodology for analysis of fleet size, use, and replacement needs.

Repair and Maintenance of Forestry Program Fleet

We examined vehicle repair and maintenance costs for the aging vehicle fleet. We compiled overall vehicle repair and maintenance costs from the Statewide Budgeting and Accounting System. We found repair and maintenance costs for vehicles have more than doubled over the five year period from fiscal year 1986-87 to 1990-91.

To further analyze vehicle repair and maintenance costs we calculated cost per mile. We used costs per mile for the overall Forestry Program fleet because Forestry Division does not monitor repair and maintenance costs by vehicle or by class. We found repair and maintenance costs for the Forestry fleet averaged approximately 10.3 cents per mile for fiscal year 1990-91.

To determine if these costs were typical, we compared them with repair and maintenance costs of the Motor Pool fleet and with vehicles used by the Department of Fish, Wildlife, and Parks. Motor Pool repair and maintenance costs averaged 5.8 cents per mile for four-wheel drive vehicles, and 5.3 cents per mile for pickups. Fish, Wildlife, and Parks repair and maintenance costs averaged 3.8 cents for four-wheel drive vehicles, and 4.2 cents for pickups. The costs for these two departments are significantly less than for the Forestry Program fleet.

Cost analysis of repair and maintenance expenditures for fleet vehicles could provide the Forestry Division with additional information to evaluate vehicle replacement. We believe the Forestry Division should develop a system to monitor and analyze repair and maintenance costs associated with its vehicle fleet.

Responsibility for Forestry Program Fleet

Responsibility for the Forestry Program fleet has been decentralized within the department and within the Forestry Division. Decentralization can be an effective management philosophy; however, we believe a coordinated system for management of the Forestry Program fleet could result in better decision-making in relation to fleet size, use, and replacement.

Forestry Division should establish a system to coordinate functions such as assignment and transfer of vehicles, vehicle specifications, replacement schedules and budgets, annual inventories, and collection of operating costs. An effective management system could allocate fleet budget based upon need rather than historical appropriations. Users of the fleet should continue to provide input concerning the number and type of vehicles necessary, vehicle specifications, current vehicle condition, and priorities for replacement.

Chapter I - Introduction

Introduction

At the request of the Legislative Audit Committee, we conducted a performance audit of the Department of State Lands (DSL) Forestry Equipment Program. In conjunction with this report we issued reports pertaining to Management of Forested Trust Land (91P-36) and the Fire Management Program (91P-34).

Audit Objectives

The objectives of the audit were to determine if:

1. Management controls over equipment accountability are operating effectively.
2. Forestry equipment is used, maintained, and replaced in an efficient manner.
3. The department is in compliance with laws and rules pertaining to accountability of Forestry Program equipment.

Audit Scope

The audit was conducted in accordance with government auditing standards for performance audits. An evaluation of DSL's equipment system was completed, which included a study of controls for tracking and distributing equipment used for forestry-related functions.

Audit work included analysis of statistical equipment samples obtained from Centralized Services Division records. We took samples from two strata, equipment with an acquisition price of $5,000 or more and equipment with an acquisition price of less than $5,000. Equipment sampled included office furniture, computers, chainsaws, radios, trailers, vans, and fire engines. We visited Forestry Division bureau offices, Field Operations Division land and unit offices, and fire departments participating in the State-County Cooperative Fire Protection Program. We observed equipment to verify the type of equipment, identification number, and location. We also traced this information to department records by examining inventory and transfer documents. If equipment was identified as lost/disposed, we verified records to determine if disposition was properly documented.

In conjunction with our statistical sample, we also reviewed a judgmental sample of equipment. Equipment items were selected while visiting the locations mentioned previously and included cargo trucks, pickups, sedans, and radios. We observed the items and verified equipment location, type of equipment, and equipment identification number with department records. We also interviewed bureau, land office, and unit office staff concerning inventory procedures and reviewed inventory records maintained by DSL's Centralized Services Division.

Based upon equipment inspections, we evaluated if equipment appeared to be in useable condition and was used by staff. We used the same equipment samples to trace each item through the equipment accountability system to determine system accuracy and reliability. During our inspections we tested for compliance with applicable state and federal laws and regulations.

We compiled historical data of Forestry Program equipment budget requests, executive budget requests, and equipment appropriations to provide background of the division's funding. We also reviewed the expansion in Forestry's fire protection program and the resulting budget increases for fire equipment during the five fiscal years from 1986-87 through 1990-91.

Due to the size of the Forestry vehicle fleet and its significant dollar value, a more thorough review of the fleet was completed. Other western states' vehicle replacement schedules were compared with those established by the Forestry Division. We examined the reasonableness of the division's vehicle replacement schedule. Audit work incorporated ascertaining how the division estimates the number of replacement vehicles required each biennium.

During field visits we compared odometer readings to vehicle records to determine accuracy of the records. We used fleet information supplied by the Forestry Division to compile and evaluate fleet age and vehicle use. Due to limited department records specific to equipment repair and maintenance, we compiled historical expenditures from the state's accounting system to determine these costs.

Our scope did not include a complete assessment of the need for all equipment in the program. Consideration of cost versus benefit of required audit work determined this analysis would not be cost beneficial.

Data Limitations

Government auditing standards require the disclosure of any constraints imposed on the audit approach because of data limitations. We were hindered in achieving our audit objectives because of limited documentation. The primary area where the Forestry Program had limited data related to repair and maintenance costs of vehicles and other equipment. Without this data it was not possible to determine if vehicles and other equipment were being replaced in a cost-effective manner.

Compliance

As part of our audit we found DSL to be generally in compliance with applicable laws specific to equipment accountability and use of federal equipment for fire-related activities. Some compliance issues were communicated to the department through management memorandums as discussed in the following section.

Management Memorandums

During the course of the audit we asked department officials for written responses to certain audit concerns. These concerns related to potential report issues and recommendations. In addition, we sent management memorandums on issues which were less significant. Issues addressed included:

-- Proper documentation of equipment transfers. Seven of 134 pieces (5.2 percent) of the equipment in our sample were transferred to different locations, yet paperwork was not available to document the transfer.

-- Proper written documentation of authorization to salvage parts from used equipment. We found four instances where state and federal equipment had been disassembled for parts, with only verbal authorization to use the equipment in this manner.

- Proper marking of equipment. We identified 25 of 436 pieces (5.7 percent) of state and federal equipment with missing government identification tags or numbers.

Chapter II - Background

Introduction

This chapter provides an overview of Department of State Lands (DSL) Forestry Equipment Program including the role and responsibilities of the Forestry Division, Field Operations Division, and Centralized Services Division. The chapter details department organization, Forestry and Field Operations Divisions' staffing and funding, and Forestry Equipment Program budget history.

History

The Office of State Forester was created by the Legislature in 1909. The State Forester was appointed by the governor, but was under the direction and control of the Board of Land Commissioners (Land Board). Under supervision of the Land Board, the State Forester had general charge of the state's timberlands. In 1971 the Office of the State Forester became the Forestry Division under the Department of Natural Resources and Conservation. In 1981 the Forestry Division was transferred to DSL. The State Forester is the division administrator. The division is headquartered in Missoula.

Organizational Structure

Forestry and Field Operations Divisions are the primary users of forestry equipment. These divisions are responsible for providing surface management on all school trust land and providing fire protection on all private and state land within forest fire districts and counties as requested. The Centralized Services Division is responsible for providing support to Forestry and Field Operations Divisions. This division also administers purchasing, equipment accountability, and equipment distribution.

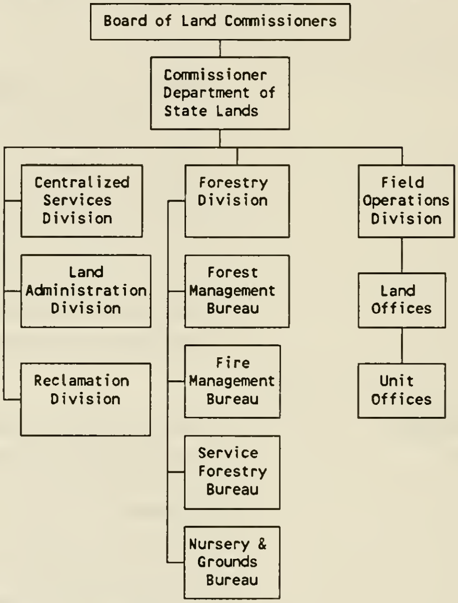
The Forestry Division's role is to manage the Forestry Program budget; establish and maintain goals, objectives, guidelines, and performance standards; and provide support to the Field Operations Division.

The role of the Field Operations Division is to conduct day-to-day field level activities in support of the department's forestry, mine reclamation, and grazing and agriculture trust land programs. Division staff also serve as the department's local representative within defined geographical areas.

The following figure illustrates the organization structure of the department including Forestry and Field Operations Divisions.

Figure 1

Organization Chart of the Department of State Lands

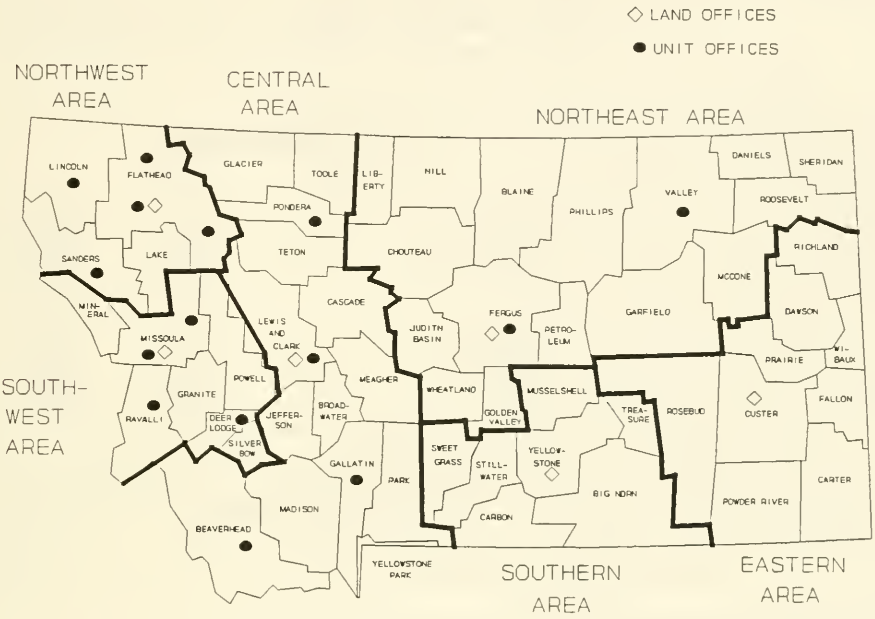


Source: Department of State Lands

The department has six administrative areas in the state. Each area is administered by a separate land office organized and staffed to provide needed support to department programs. Unit offices are established in four of six areas. Unit offices conduct field activities within specified portions of the geographic area of the unit. The following figure illustrates the geographic distribution of land and unit offices.

Figure 2

Geographic Distribution of Land and Unit Offices



Source: Compiled by the Office of the Legislative Auditor from Department of State Lands' records

For more information on the history and functions of the Forestry Division see the Management of Forested Trust Land (91P-36) audit report.

Forestry Program Funding and Staffing

Forestry Program funding is from General, State Special Revenue, and Federal Special Revenue Funds. State Special Revenues are generated from the sale of nursery stock to landowners, assessments to private landowners for fire protection, and a portion of the revenue generated from timber sales for brush and timber stand improvement (the remaining money goes to school trust funds). The following table shows expenditures for the Forestry Program for fiscal years 1990-91 and 1991-92.

Table 1

Forestry Program Expenditures*
(Fiscal Years 1990-91 and 1991-92)

	FY 1990-91	FY 1991-92
Expenditures:		
Personal Services	$5,511,367	$6,141,508
Operating Expenses	1,731,717	1,960,807
Equipment	364,741	617,467
Total	$7,607,825	$8,719,782
Funding:		
General Fund **	$4,801,182	$4,906,255
State Special	2,273,714	2,904,439
Federal Special	532,929	909,088
Total	$7,607,825	$8,719,782

* Does not include Centralized Services or Forestry Division administrative expenses.

** Does not include supplemental funds used to fight fires.

Source: Compiled by Office of Legislative Auditor from the Statewide Budgeting and Accounting System

Of the 360 Full-Time Equivalents (FTE) authorized for the department by the legislature in fiscal year 1991-92, approximately 57 permanent and 12 seasonal FTE were designated to the Forestry Division. Field Operations Division was allocated approximately 102 permanent and 66 seasonal FTE for forestry activities. FTE in various land and unit offices are allocated based upon the workload in the geographic area.

Forestry Equipment Program

Forestry Division establishes the budget for equipment used in forestry programs within the division and land offices. Forestry Division staff help land office officials decide what equipment is needed and the appropriate location. In collaboration with the Forestry Division, the Centralized Services Division establishes equipment purchasing procedures and coordinates distribution of equipment at different locations in the state.

According to department records, the Forestry Equipment Program has approximately 5,200 items of state and federal equipment with an acquisition cost of almost $14.2 million. The federal government provides Federal Excess Personal Property (FEPP) which is equipment provided to state foresters or equivalent state officials in a cooperative effort to organize, train, and equip local fire fighting forces to prevent, control, and suppress fires. The state has administrative responsibility for FEPP, even though title to the equipment is retained by the federal government. When it is necessary to convert FEPP equipment for use as fire equipment, fabrication is completed by the Fire Management Bureau. The federal government requires FEPP equipment be used primarily for fire control on forested and watershed lands. For continued participation in the FEPP program, Forestry Division must ensure FEPP equipment is used 90 percent for fire detection and suppression related activities. No nonfire use can be planned on a regular basis. We found the department is complying with this use criteria.

State and federal equipment used in the Forestry Program consists of on and off-road vehicles, and other equipment including radios, computers, chainsaws, and various other items ranging from helicopters to water tanks. On and off-road vehicles include: sedans; pickups; utility vehicles (such as vans and four-wheel drive trucks); cargo trucks for hauling tools and equipment; and fire trucks, which include light (200 gallon water tank), medium (500-750 gallon water tank), and heavy (1,000 gallon or larger water tank) engines.

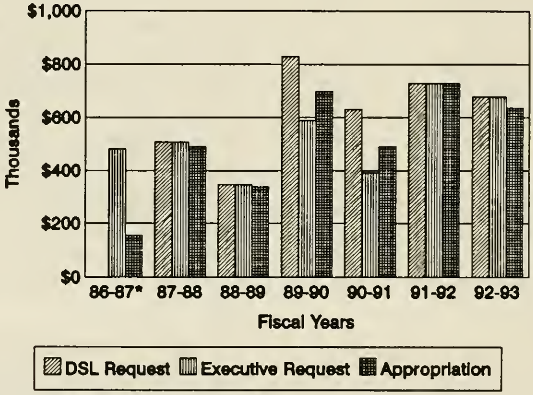
Centralized Services Division staff assist field staff in developing equipment specifications and establishing departmental purchasing guidelines. Centralized Services Division staff also assign equipment numbers, mark equipment, and monitor the equipment inventory system. Centralized Services Division personnel manage and coordinate the equipment inventory system for the department.

Forestry Equipment Funding

To provide a historical funding perspective of the Forestry Equipment Program, we compiled division budget requests, executive budget requests, and equipment appropriations for fiscal years 1986-87 through 1992-93. Following is a graph of those figures including appropriation changes resulting from special sessions.

Figure 3

Forestry Program
Equipment Budget Requests and Appropriations



*Division budget request not available

Source: Compiled by the Office of the Legislative Auditor from Department of State Lands' records

Autos and trucks, fire suppression equipment, and communication equipment constitute a significant portion of the Forestry Program budget requests. For the four fiscal years 1987-88 through 1990-91 autos and trucks constituted 47.5 percent of equipment budget requests, followed by fire suppression equipment at 23 percent. Communication equipment totalled 10.9 percent of budget requests.

Since fiscal year 1986-87, Forestry Equipment Program appropriations have generally increased. One reason for the increase in equipment funding is expansion of the State Fire Protection Program to include land previously protected by the United States Forest Service (USFS). DSL recommended the state assume fire protection of additional land since the state could provide the same protection at a lower cost than what the USFS would charge. The 1983 Legislature agreed, allowing DSL to assume additional fire protection responsibility for approximately 1.9 million acres of land from the Forest Service. The acreage consisted of five blocks of land transferred to state protection beginning in the 1985 biennium, with the last block assumed in the 1993 biennium. The following is a table showing the land assumptions.

Table 2

Acres Assumed by DSL

Biennium	Block Number	Acreage
1985	Block I	355,000
1987	Block II	395,000
1989	Block III	413,492
1991	Block IV	638,000
1993	Block V	58,000
Total Acreage		1,859,492

Source: Forestry Division records

During the first year of each biennium the process for assumption of each block was initiated by acquiring necessary equipment. The actual fire protection began the second year of each biennium.

Chapter III - Equipment Accountability and Use

Introduction

Forestry equipment consists of state-owned and Federal Excess Personal Property (FEPP). The equipment includes sedans, pickups, van, trucks, fire engines, pumps, hoses, radios, and transmitters. The Forestry Equipment Program has approximately 5,200 pieces of state and federally owned equipment. This equipment has a total acquisition price of approximately $14.2 million. The equipment is located at six land offices, 14 unit offices, and the 52 counties participating in the State-County Cooperative Fire Protection Program. The cooperative consists of counties which provide a basic level of fire protection through a system of volunteers, county personnel, and rural fire department personnel on land not protected by any other organization. In addition to fire suppression equipment, the counties receive support from Department of State Lands (DSL) with organization, planning, training, and fire suppression.

Equipment accountability was included in our audit work due to the sizable number, significant dollar value, and potential for theft or loss of equipment items. Due to the large number of items distributed throughout the state, equipment inventory and recording keeping is an important function for DSL.

State Equipment

The Forestry Equipment Program uses approximately 3,900 pieces of state-owned equipment with an acquisition price of approximately $6.4 million. Equipment is used by Forestry and Field Operations Divisions' staff, and monitored by Centralized Services Division.

In compliance with the Montana Operations Manual (MOMs), DSL monitors items with an acquisition cost of $1,000 or more. Centralized Services Division initially marks equipment with state identification numbers and enters the items in the Property Accountability Management System (PAMS). Centralized Services Division informs Forestry Division and Field Operations Division staff of reporting and documentation procedures for lost, stolen, or destroyed equipment; and transferred, sold, traded, or junked equipment. Biennial physical inventories are completed by Forestry Division and Field Operations Division staff, with results reported to Centralized Services.

Federal Excess Personal Property

In addition to state-owned equipment, Forestry and Field Operations Divisions use approximately 1,300 pieces of FEPP with an acquisition price of approximately $7.8 million. The United States Forest Service (USFS) and the state of Montana have entered into a cooperative agreement for the use of FEPP. In accordance with this agreement, Centralized Services Division staff monitor the use and location of FEPP.

Federal equipment with an acquisition cost of $1,000 and above is entered into the United States Department of Agriculture Property Management Information System. Centralized Services Division monitors some state and federal equipment with an acquisition cost of less than $1,000 if the equipment is considered sensitive to theft. An example of such equipment is chainsaws.

Equipment Accountability System Operating as Intended

Equipment accountability involves proper marking of equipment items and record keeping so items can be traced to a particular location and using entity. Equipment accountability systems allow for documenting approval when transferring or disposing of items and provide the formal records necessary when conducting inventories.

We found the equipment accountability system administered by Centralized Services Division, and used by Forestry and Field Operations Divisions, is operating as intended. The system is used to monitor state and federal equipment.

Overall, we sampled 436 pieces of state and federal equipment. We were able to trace 434 pieces of equipment through the department's inventory records and verify existence and location. We examined two items which could not be traced through DSL's inventory system. One item, a chainsaw, was missing an identification number. A fire engine was marked with an old license number. That number could not be traced through the department's records.

In reviewing equipment accountability procedures, we noted physical inventories of equipment are completed biennially by bureau and field office personnel. Staff report equipment to Centralized Services Division by PAMS or FEPP number. Officials also track vehicles by DSL plate number. Transfer of most FEPP and state equipment to different locations within the state is made after approval from appropriate authorities.

Equipment is in Useable Condition and Used

During our field visits we generally found Forestry Program equipment to be in useable condition and being used by staff. We evaluated the condition of equipment in our statistical property sample items. After inspection of each piece of equipment, we found 95.5 percent of the sample items are in useable condition and are used by staff. The items identified as not in useable condition or not used by staff included some equipment in need of repair.

Chapter IV - Forestry Program Fleet

Introduction

As of Autumn 1991, the Forestry Equipment Program had an inventory of 265 vehicles, with a replacement value of approximately $5.4 million at current replacement rates. Due to the significant cost of the vehicle fleet compared with other equipment items, we concentrated our audit work on Forestry Program vehicles. The subsequent sections deal with our review of Forestry Division's vehicle replacement schedules; an analysis of vehicle age and total and annual mileage accumulated; an assessment of vehicle repair and maintenance costs; and an evaluation of overall fleet management responsibility.

Fleet Odometer Records are Accurate

While visiting bureaus, and land and unit offices during the Autumn of 1991, we verified the accuracy of vehicle records maintained by staff. We first recorded odometer readings from vehicles in our judgmental sample and then compared the figures with odometer readings reported to Centralized Services. Overall, we found documented odometer readings were accurate. We used department vehicle records extensively in our analysis.

Fleet Replacement Schedule is Reasonable

Based upon schedules obtained from other states, the Forestry Division developed its own vehicle replacement schedule. To determine the reasonableness of the division's replacement schedule we collected updated schedules used by Colorado, California, Washington, Oregon, and Idaho. We then compared these schedules with those developed by the division. The following table illustrates a comparison of the replacement schedules.

Table 3

Forestry Program Fleet

Comparison of Other State's Replacement Schedules

(By Vehicle Class)

State	Sedans Utility Pickups	Cargo & Support	Light Engine	Medium Engine	Heavy Engine
Montana	7yr/90,000mi	10yr/100,000mi	10yr/40,000mi	15yr/50,000mi	20yr/75,000mi
Colorado	6yr/60,000mi	10-15yr	10-15yr	10-15yr	10-15yr
California	8yr/90,000mi	14 yr	15 yr	15 yr	12-15yr
Washington	6yr/60,000mi	10-12yr	10-12yr	10-12yr	10-12yr
Oregon	6yr/90,000mi	10yr/60,000mi	10yr	12yr	15yr
Idaho	7yr/88,000mi	15yr	10-15yr	15-20yr	10-15yr

Source: Compiled by the Office of the Legislative Auditor

As the above table demonstrates, other state's schedules are relatively consistent with those established by Forestry Division. The one area where there appears to be a difference is the heavy engine class. The Forestry Division has established the life of heavy engines at 20 years, which is approximately five years longer than the schedules established by the five states we contacted. The division has a total of four state-purchased heavy engines in its fleet. Records indicate these vehicles are not accumulating a high number of miles each year which would extend their useful life. Therefore, it appears Forestry Division has established a reasonable replacement schedule for its fleet of vehicles when compared to other state's schedules. Actual use of the replacement schedule is discussed on page 21.

Fleet Age and Mileage

To determine the current status of the Forestry Program's fleet, we evaluated the age and accumulated mileage of vehicles. We compiled age statistics of the program's fleet as of Autumn 1991 so the vehicle ages would correspond to the time period of the most recently available mileage data. We excluded Federal Excess Personal Property (FEPP) vehicles from our evaluation because this equipment is normally sent to counties for use in the State-County Cooperative Fire Protection Program. Division personnel did indicate, however, the division uses some FEPP vehicles for regular operations.

Fleet Age Distribution by Class

The following table shows a breakdown by class of vehicle according to age. We separated vehicles with ages less than the established replacement age, those at replacement age, and those exceeding the replacement age for each class. The number of vehicles which meet or exceed the age criteria for replacement are highlighted.

Table 4

Forestry Program Fleet Analysis By Age

(Autumn 1991)

Class	0-6 Years	7 Years	8-15 Years	16-20 Years	Over 20 Years
Sedans	6	5	8	0	1
Pickups	59	9	56	0	1
Utility	15	5	14	2	1
Total	80	19	78	2	3

Class	0-9 Years	10 Years	11-15 Years	16-20 Years	Over 20 Years
Cargo & Support	10	0	4	6	1
Light Engines	47	0	7	2	1
Total	57	0	11	8	2

Class	0-14 Years	15 Years	16-20 Years	Over 20 Years
Medium Engines	0	0	1	0
Total	0	0	1	0

Class	0-19 Years	20 Years	Over 20 Years
Heavy Engines	4	0	0
Total	4	0	0

Source: Compiled by the Office of the Legislative Auditor from Forestry Division records

Overall, 124 of the Forestry Program's 265 state-owned vehicles (46.8 percent) meet or exceed the established replacement age.

Thirty-One Percent of Fleet Exceeds Mileage Requirement

In addition to vehicle age, the Forestry Division established mileage as a criteria for replacement. According to division officials, actual replacement of vehicles is based primarily on mileage and condition. The following table presents a break down of the Forestry Program fleet by the number of miles accumulated on each vehicle as of Autumn 1991.

Table 5

Forestry Program Fleet Analysis By Mileage
(Autumn 1991)

Mileage	Sedan	Pickups	Utility	Cargo & Support
Less than 50,000	6	45	10	10
50,000-70,000	4	18	10	2
70,001-90,000	5	26	10	2
90,001-100,000	1	9	2	0
100,001-110,000	1	8	2	1
110,001-120,000	2	8	0	1
120,001-150,000	1	9	2	2
More than 150,000	0	2	1	3
Total	20	125	37	21

Mileage	Light Engine	Medium Engine	Heavy Engine
Less than 40,000	31	0	4
40,000-50,000	12	0	0
50,001-75,000	11	1	0
75,001-90,000	2	0	0
90,001-110,000	0	0	0
110,001-120,000	0	0	0
120,001-150,000	1	0	0
More than 150,000	0	0	0
Total	57	1	4

Source: Compiled by the Office of the Legislative Auditor from Forestry Division records

In the above table we highlighted the number of vehicles in each class which meet or exceeds mileage criteria set by Forestry Division. Overall, 82 of 265 or 30.9 percent of the forestry vehicles meet or exceed mileage established for replacement.

Fleet Analysis Summary

The following table provides an overall breakdown of the Forestry Program fleet. We compiled the number of vehicles which exceed age; which exceed mileage; which exceed age and mileage; and the total number of vehicles which exceed age or mileage. (If a vehicle reached both the age and the mileage limits, the vehicle is shown in a separate column so it would only be counted once.)

Table 6

Forestry Program Fleet Summary
(Autumn 1991)

CLASS OF VEHICLE	NUMBER EXCEED AGE ONLY	NUMBER EXCEED MILEAGE ONLY	NUMBER EXCEED AGE AND MILEAGE	TOTAL NUMBER EXCEED AGE OR MILEAGE	TOTAL FLEET	PERCENT EXCEED
Sedans	9	0	5	14	20	70.0%
Pickup Trucks	32	2	34	68	125	54.4%
Utility Vehicles	16	1	6	23	37	62.2%
Cargo & Support	5	1	6	12	21	57.1%
Light Engines	1	17	9	27	57	47.4%
Medium Engines	0	0	1	1	1	100.0%
Heavy Engines	0	0	0	0	4	0.0%
Total Fleet	63	21	61	145	265	54.7%

Source: Compiled by the Office of the Legislative Auditor from Forestry Division records

Overall, we found 145 vehicles of the total fleet of 265 (54.7 percent) meet or exceed the division's established replacement limits. However, according to division management, actual vehicle mileage and condition are the primary indicators for replacement. On the other hand, the division used a formula based on replacement age (not actual vehicle age) to calculate the vehicle replacement budget request for the 1995 biennium.

To calculate the replacement budget, the division takes the number of vehicles in each class and divides it by the replacement age for each class. For example, the Forestry Program fleet has 20 sedans with a replacement age of 7 years, therefore, approximately 3 sedans (or 1/7 of the class) should be replaced each year. The budget is then determined by multiplying the number of replacement vehicles in each class by the estimated per unit replacement cost. The effect this procedure has on replacement estimates versus replacement needs is discussed in the following section. The Forestry Program fleet is generally accumulating mileage at a slower rate than would be expected based on the replacement criteria.

Fleet Use

To examine the use of the fleet we calculated the number of miles vehicles were driven from Autumn 1989 to Autumn 1991. These figures can be compared to the number of miles each class of vehicle should accumulate annually based on the division's replacement schedule. Annual accumulation figures were calculated by dividing the replacement mileage by the replacement age for each class of vehicle. For example, a sedan has an estimated life of seven years and could be driven 90,000 miles during that time. These vehicles could accumulate approximately 12,800 miles each year (90,000 miles / 7 years). The following table shows the calculated expected annual mileage based on the replacement schedule for each class of vehicle.

Table 7

Expected Annual Mileage Based on Replacement Schedule

Class of Vehicle	Scheduled Replacement Age	Scheduled Replacement Mileage	Expected Annual Miles Based Upon Replace Schedule
Sedans	7 years	90,000	12,800
Pickup	7 years	90,000	12,800
Utility	7 years	90,000	12,800
Cargo & Support	10 years	100,000	10,000
Light Engine	10 years	40,000	4,000
Medium Engine	15 years	50,000	3,333
Heavy Engine	20 years	75,000	3,750

Source: Compiled by the Office of the Legislative Auditor from Forestry Division records

To evaluate the use of the fleet, we compiled the number of miles accumulated by each vehicle within specified mileage ranges. The following table indicates the number of vehicles, by type, within mileage ranges.

Table 8

Number of Vehicles by Mileage Ranges

Highway Vehicles

Annual Miles	Sedans	Pickup	Utility	Cargo	Total Highway	Percent
Less than 1,000	2	8	1	1	12	6%
1001-2000	0	5	2	4	11	6%
2001-3000	4	6	3	2	15	8%
3001-5000	0	18	4	6	28	14%
5001-8000	4	20	9	2	35	18%
8001-10,000	5	18	6	1	30	15%
10,001-12,000	0	15	4	0	19	10%
12,001-15,000	2	20	5	1	28	14%
More than 15,000	3	11	2	4	20	10%
TOTAL	20	121*	36*	21	198	100%

Fire Engines

Annual Miles	Light Engine	Medium Engine	Heavy Engine	Total Engines	Percent
Less than 1,000	2	0	3	5	8%
1001-2000	2	1	1	4	7%
2001-3000	5	0	0	5	8%
3001-4000	15	0	0	15	25%
4001-5000	14	0	0	14	23%
5001-8000	13	0	0	13	22%
8001-10,000	2	0	0	2	3%
10,001-15,000	1	0	0	1	2%
More than 15,000	1	0	0	1	2%
TOTAL	55*	1	4	60	100%

* Number of vehicles less than total in fleet because we could not verify all mileage.

Source: Compiled by the Office of the Legislative Auditor from Forestry Division records

In the above tables we shaded the number of vehicles used below the expected number of annual miles. We found a substantial number of vehicles in the Forestry Program fleet are accumulating less than the expected mileage. For example, 15 of 20 sedans are used less than 12,000 miles per year. Ninety of 121 pickups are used less than 12,000 miles per year. Twenty-nine of 36 utility vehicles are used less than 12,000 miles per year, and 16 of 21 cargo vehicles are accumulating less than 10,000 miles annually. Medium and heavy engine use is below the expected rate. However, medium and heavy engine use is more dependent upon the amount of fire activity, making mileage comparison less important. Excluding medium and heavy engines, 174 of 253 vehicles (69 percent) accumulated less miles than expected based on the division's replacement criteria.

Analysis by individual vehicle found several vehicles with limited use. For example, 12 highway vehicles accumulated less than 1,000 miles per year. Another 11 highway vehicles accumulated between 1,001 and 2,000 annual miles. We found these low use vehicles were generally older vehicles ranging in age from 10 to 24 years. There were also a few newer vehicles with limited use. Excluding medium and heavy engines, 47 of 253 vehicles (19 percent) accumulated 3,000 miles or less per year.

Division officials agree some vehicles accumulate less miles than would be expected. However, officials indicate this is a natural result of current management practices. For example, officials said the program does not experience a uniform work load throughout the year. During the summer field season the Field Operations Division employs about 200 seasonal workers thereby requiring additional vehicles. This seasonal workload results in a number of vehicles receiving little use during winter months.

In addition, officials believe a limited replacement budget results in the division keeping older, less reliable vehicles to reduce mileage accumulated on new vehicles. Officials indicate staff use older vehicles for local transportation and non-critical trips. This results in low annual mileage on the older vehicles and somewhat lower mileage on the new vehicles. The division indicates older vehicles, particularly engines, are moved to locations where vehicles are expected to accumulate less mileage.

Division Should Analyze Fleet Needs

The division began planning its replacement schedule in 1989. The schedule was first used during the budget process for the 1991 Legislature. At about this same time the division began collecting mileage data to apply to its replacement schedule. The mileage data is not used to analyze actual use of the fleet like we did in the section above. Our analysis showed 69 percent of the fleet accumulates mileage at a rate less than would be expected based on the replacement criteria. Many of the vehicles (approximately 19 percent) are being used 3,000 miles or less per year. Based on the division's response to our data it appears the division has some unique vehicle needs. This includes some vehicles primarily used by seasonal workers during the summer and other vehicles used for local transportation and non-critical trips.

We could find limited documentation showing how the division's fleet was established. However, there was documentation supporting fleet requirements for the State Fire Protection Program. Yet, it appears the size of the fleet has been controlled mostly by available appropriations.

The division should expand efforts to develop justification for fleet size, including collection and analysis of annual use and mileage data. If it is necessary to maintain a fleet of older, higher mileage vehicles to sustain temporary positions and less critical locations, then the department should consider eliminating these vehicles from analysis of the primary fleet of vehicles. A secondary fleet could be maintained and evaluated by using an adjusted replacement schedule.

No matter what type of fleet, it is necessary to develop a method to accurately substantiate need, and justify optimal fleet size. An evaluation of the fleet could identify equipment not sufficiently used and possibly ready for disposal or relocation, ultimately maintaining the most cost effective fleet. By monitoring mileage accumulated by different classes of vehicles, the Forestry Division could better determine actual fleet needs. A smaller fleet would be less costly to operate and maintain.

Analysis of the fleet (potentially divided into primary and secondary vehicles) would also support requests for replacement funding. The division should improve documentation of replacement criteria related to replacement funding requests if mileage and condition are the critical factors. The criteria may also need to be refined to take into account how different types of vehicles are actually used.

Recommendation #1

We recommend the Forestry Division establish and use a documented methodology for analyzing fleet size, use, and replacement needs.

Repair and Maintenance of Forestry Program Fleet

As previous audit work identified, more than half of the Forestry Program fleet met its replacement criteria. To determine cost effects of an aging vehicle fleet, we examined vehicle repair and maintenance costs. If vehicles are not replaced when necessary, then we would expect repair and maintenance costs to increase.

DSL does limited monitoring of repair and maintenance costs by vehicle. In addition, the department does not track repair and maintenance costs overall. Because of this, we were only able to compile overall vehicle repair and maintenance costs from the Statewide Budgeting and Accounting System (SBAS). The time period we reviewed covered five fiscal years from 1986-87 through 1990-91. We were able to break down expenditures into general operations, federal excess property, and fire suppression. We included federal excess property and fire suppression in our analysis because these costs are true costs associated with repair and maintenance expenditures for the division and are necessary for a comprehensive examination of repair and maintenance costs.

The following figure provides an overview of vehicle repair and maintenance costs for fiscal years 1986-87 through 1990-91.

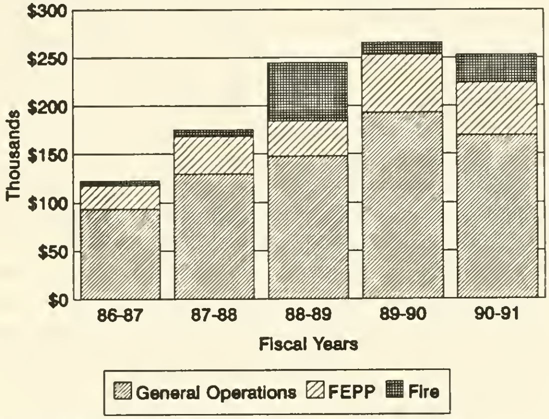


Figure 4

Forestry Program

Vehicle Repair and Maintenance Costs

Source: Compiled by the Office of the Legislative Auditor from Department of State Lands' records

We found repair and maintenances costs for vehicles have more than doubled over the five year period from fiscal year 1986-87 to 1990-91. We also found repair and maintenance expenditures of federal excess property are increasing. These increases could be reflective of the increased need for fire suppression equipment at the county level. Our repair and maintenance costs exclude personal services costs related to in-house repair and maintenance work. The division does not monitor these expenditures, thus we were unable to compile these costs in relation to the Forestry Program fleet.

To further analyze vehicle repair and maintenance costs, we calculated cost per mile. Since repair and maintenance costs are not monitored by vehicle or by class, we were only able to calculate costs per mile for the overall Forestry Program fleet. Based upon SBAS, overall repair and maintenance cost for the fleet averaged approximately 10.3 cents per mile for fiscal year 1990-91, excluding equipment development costs for federal excess property.

To determine if these costs were typical, we compared them with repair and maintenance costs of the Motor Pool fleet maintained by the Department of Transportation. Motor Pool has a detailed system which allocates costs by vehicle class, and by vehicle. Motor Pool four-wheel drive vehicle repair and maintenance costs averaged 5.8 cents per mile, while pickups averaged 5.3 cents, excluding personal services costs. These costs are about one-half of those for the Forestry fleet.

We would expect Forestry Program vehicle repair and maintenance costs per mile to be somewhat higher than Motor Pool due to several factors. Motor Pool vehicles are kept an average of three to five years and generally accumulate a higher number of miles per year. Motor Pool vehicles are also used primarily for highway transportation, while Forestry Program vehicles have primarily off-road use. In addition, repair and maintenance costs used to calculate Forestry Program cost per mile include the various classes of vehicles, i.e. sedans, pickups, utility vehicles, cargo and support vehicles, and fire engines, which could affect the total costs per mile computed.

Discussions with Department of Fish, Wildlife, and Parks (FW&P) officials indicates the agency has a system in place to monitor its fleet of vehicles. The FW&P system enables the department to calculate cost per mile, by vehicle, and can provide a class average of costs. We used FW&P records and calculated repair and maintenance cost per mile for pickups and four-wheel drive vehicles, excluding personal services. These costs averaged 4.2 cents for pickups and 3.8 cents for four-wheel drive vehicles. These costs are also significantly less than for the Forestry Program fleet.

DSL has not established a management system to monitor repair and maintenance costs for its vehicles. Forestry Program personnel said they discussed the idea of monitoring repair and maintenance costs by vehicle; however, they have not found a system appropriate to their needs.

Forestry Division officials should contact other state agencies such as Motor Pool, Fish, Wildlife, and Parks, or other states' forestry programs to investigate systems which would enable them to compile repair and maintenance costs suitable to the needs of the program. Cost analysis of repair and maintenance expenditures for fleet vehicles could provide the Forestry Division with information to calculate actual cost per mile. This information could be used to replace vehicles with high repair and maintenance costs, resulting in a more cost effective fleet. More detailed repair and maintenance costs could lead to changes in the replacement schedule such as increasing or decreasing the age and/or mileage criteria. The criteria could be refined for each class of vehicle.

Recommendation #2

We recommend Forestry Division develop a system to monitor and analyze repair and maintenance costs associated with its vehicle fleet.

Responsibility for Forestry Program Fleet

Responsibility for the Forestry Program fleet has been decentralized within the department and within the Forestry Division. The Centralized Services Division has responsibility for property accountability, which includes reporting and documentation procedures for vehicle transfers or for lost, stolen, or junked vehicles. The Centralized Services Division also works with Forestry Program administration and staff when conducting biennial inventories of vehicles used in the Forestry Program. Forestry Division central management is responsible for establishing fleet replacement schedules, and uses replacement criteria to determine fleet budget needs. Finally, the bureaus, and land and unit offices actually use the fleet. The actual vehicle users are to employ their first hand knowledge of the vehicles to help ensure vehicles are maintained and/or replaced when cost effective. Each land office relies on the unit offices to specify its own vehicle needs. The Forestry Division allocates the budget for purchase of new vehicles down to the land office level based upon a percentage of appropriations and vehicle requests.

Need for Fleet Management System

Decentralization can be an effective management philosophy; however, in this case, we believe a coordinated system for management for the Forestry Program fleet would result in better decision making in relation to fleet size, use, and replacement. A management system for the fleet would provide for consistency among the various vehicles users by establishing policies related to record keeping for vehicle use, repair and maintenance, and replacement.

We made recommendations to the division to establish and use a documented methodology for analyzing fleet size, use, and replacement (page 26). We also recommended the division develop a system to monitor and analyze repair and maintenance costs associated with its vehicle fleet (page 29). We believe these recommendations should result in better justification to the legislature of the division's fleet needs and also result in a more cost effective fleet.

A system is needed to coordinate such functions as assignment and transfer of vehicles, vehicle specifications, replacement schedules and budgets, annual inventories, and collection of operating costs. An effective management system could allocate the fleet budget based upon need rather than historical appropriations. Users of the fleet should continue to provide input concerning the number and type of vehicles needed, vehicle specifications, current vehicle conditions, and priorities for vehicle replacement.

Even though the division has recognized the necessity of a formalized replacement schedule, there is no coordination for overall fleet analysis. The Forestry Program fleet involves significant costs. We estimate the current replacement cost of the fleet (265 vehicles) to be $5.4 million. In addition, annual repair and maintenance costs are approximately $253,000, excluding personal services costs.

Forestry officials indicate the Department of State Lands tends to decentralize its operations to allow for increased flexibility. By instituting a fleet management system, the Forestry Program would not give up the autonomy of the unit and land offices, but provide the program as a whole a means to monitor its fleet and improve the overall cost effectiveness of the program.

Recommendation #3

We recommend the division establish a fleet management system.

Agency Response

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LEGISLATIVE AUD
CAPITOL STATION

DEPARTMENT OF STATE LANDS

STAN STEPHENS, GOVERNOR

STATE OF MONTANA

(406) 444-2074

1625 ELEVENTH AVENUE
HELENA, MONTANA 59620

November 25, 1992

Mr. Scott Seacat, Legislative Auditor
Office of the Legislative Auditor
State Capitol
Helena, Montana 59620

Dear Scott:

Attached is the Department of State Lands responses to the Forestry Equipment Program Audit conducted by your office. We believe that this audit will be beneficial in helping members of the Legislature, as well as others interested in our programs, better understand the activities of the Forestry Division.

We appreciate the cooperation and courtesy afforded us by your staff during the audit. If you have any questions regarding our response to the Forestry Equipment Program Audit, please contact Don Artley at our Forestry Division office in Missoula.

Sincerely,

Dennis D. Casey, Commissioner
Department of State Lands

jc

Attachment

cc: Artley
Jahnke

"AN EQUAL OPPORTUNITY EMPLOYER"

Recommendation #1.

We recommend the Forestry Division establish and use a documented methodology for analyzing fleet size, use, and replacement costs.

Agency Response

We concur.

We are currently re-examining our present methods for how we determine and justify replacing our vehicles. We will analyze our current fleet size and use data, as well as our replacement criteria. We intend to establish and document an improved methodology for determining our vehicle replacement needs prior to the 1995 Legislative Session.

Recommendation #2.

We recommend Forestry Division develop a system to monitor and analyze repair and maintenance costs associated with its vehicle fleet.

Agency Response

We concur.

We have initiated preliminary efforts to identify a system to track and report vehicle repair and maintenance costs. We plan to contact other departments and agencies in order to study their systems as part of our process. We intend to have a system in place by FY95.

Recommendation #3.

We recommend the division establish a fleet management system.

Agency Response

We concur.

We agree that we need a better method to manage and allocate our fleet budget, and to better coordinate among staff and field offices. Therefore, we will immediately begin a process to develop an overall fleet management system, which will include such functions as:

- assignment and transfer of vehicles;
- vehicle specifications;
- replacement schedules and budgets;
- annual inventories; and
- operating costs.

We hope to have such a management system in place by the beginning of FY95.